

L Number	Hits	Search Text	DB	Time stamp
1	365	full adj match	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:18
2	41	(full adj match) and search adj key	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:18
3	5	((full adj match) and search adj key) and search adj tree	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:32
4	3	((full adj match) and search adj key) and (search adj tree) same table	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:20
5	25	((full adj match) and search adj key) and (search same table same (key or index\$6))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:21
6	18	((full adj match) and search adj key) and (search same table same (key or index\$6))) and (look\$3 adj up) same table	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:31
7	1	((full adj match) and search adj key) and (search same table same (key or index\$6))) and (look\$3 adj up) same table) and leaf same (bit same tree)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:27
8	2	((full adj match) and search adj key) and (search same table same (key or index\$6))) and (look\$3 adj up) same table) and leaf same (bit and tree)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:25
9	2	((full adj match) and search adj key) and (search same table same (key or index\$6))) and (look\$3 adj up) same table) and leaf and bits! and tree	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:25
10	2	((full adj match) and search adj key) and (search same table same (key or index\$6))) and (look\$3 adj up) same table) and leaf and bits!	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:25
11	2	((full adj match) and search adj key) and (search same table same (key or index\$6))) and (look\$3 adj up) same table) and leaf	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:26
12	5	((full adj match) and search adj key) and search adj tree) and leaf	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:26
13	16	((full adj match) and search adj key) and (search same table same (key or index\$6))) and (look\$3 adj up) same table) and (bits same tree)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:27

14	16	(((full adj match) and search adj key) and (search same table same (key or index\$6))) and (look\$3 adj up) same table) and (bits! same tree)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:28
15	8	(((full adj match) and search adj key) and (search same table same (key or index\$6))) and (look\$3 adj up) same table) and length same bits!	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:30
16	16	(((full adj match) and search adj key) and (search same table same (key or index\$6))) and (look\$3 adj up) same table) and length same bit	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:32
17	60508	(look\$3 adj up) same table	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:31
18	186	((look\$3 adj up) same table) and search adj tree	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:32
19	27	((look\$3 adj up) same table) and search adj tree) and search adj key	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:32
20	18	(((look\$3 adj up) same table) and search adj tree) and search adj key) and length and bit	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:41
22	11	(((look\$3 adj up) same table) and search adj tree) and search adj key) and length and bit) and hash\$7	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:38
24	8	(((look\$3 adj up) same table) and search adj tree) and search adj key) and length and bit) and hash\$7) and table same (address or pointer) same stor\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:39
25	0	(((look\$3 adj up) same table) and search adj tree) and search adj key) and length and bit) and brach\$3 and leaf	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:42
26	7	(((look\$3 adj up) same table) and search adj tree) and search adj key) and length and bit) and branch\$3 and leaf	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:42



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EZchip Network Processors - Memory White Paper

... provide a mechanism to resolve the **search** into a ... In the Egress LSR (Decapsulating **node**), four **hash** look ... EXAMPLE OF A **TREE** INTENSIVE APPLICATION: IPv6 ROUTER ...
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[PDF] Fast String Search Algorithms 1 Introduction

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... A new **leaf** is attached to the PATRICIA **tree** at the point where the **search** ends ... It may require creating a new internal **node** to attach an edge to the new **leaf** ...
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... of bits followed from the root of the **tree** to a ... $O(S)$ where S is the maximum size of a trie **node**). ... in the IP lookup algorithm based on Binary **search** on Prefix ...
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... multibit trie schemes improve on linear **search** by placing ... with a single wide memory access per **node**. For a **tree**-bitmap implementation that attempts to traverse ...
www.ieee-infocom.org/2004/Papers/54_5.PDF - [Similar pages](#)

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... order of their probability values; each **leaf node** in the ... the technique for pruning the **search tree** may be ... in terms of pattern matching, unification and **search**. ...
www.cognitionresearch.org.uk/papers/dbir/jis_1994/wolff_1994.doc - [Similar pages](#)

Software development

... merges the two trees into a single **tree** and adds ... If all weights equal one, use breadth-first **search**. ... Finally for each **node**, it runs Dijkstra's algorithm and ...
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[ps] Multiway Range Trees: Scalable IP Lookup with Fast Updates

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... very limited, and only that portion of data structure that is relevant to **search** is kept in ... ffl [Range **Tree**:] All the children of a **node** are allocated ...
www.cs.wustl.edu/cs/techreports/1999/wucs-99-28.ps.Z - [Similar pages](#)

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... to the **leaf** nodes of the **tree** shown in ... **search** are listed below: Step 1 Binary **search** of the ... against the path information field of the corresponding **leaf node**. ...
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JNL = Journal or Magazine **CNF** = Conference **STD** = Standard**1 A fast and compact longest match prefix look-up method using pointer cache for very long network address***Uga, M.; Shiimoto, K.;*

Computer Communications and Networks, 1999. Proceedings. Eight International Conference on , 11-13 Oct. 1999

Pages:595 - 602

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1 [Scalable high-speed prefix matching](#)

Marcel Waldvogel, George Varghese, Jon Turner, Bernhard Plattner

 November 2001 **ACM Transactions on Computer Systems (TOCS)**, Volume 19 Issue 4

Full text available: pdf(933.02 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citing](#), [index terms](#)

Finding the longest matching prefix from a database of keywords is an old problem with a number of applications, ranging from dictionary searches to advanced memory management to computation geometry. But perhaps today's most frequent best matching prefix lookups occur in the Internet, when forwarding packets from router to router. Internet traffic volume and link speeds are rapidly increasing; at the same time, a growing user population is increasing the size of routing tables against which p ...

Keywords: collision resolution, forwarding lookups, high-speed networking

2 [Full papers: Tree bitmap: hardware/software IP lookups with incremental updates](#)

Will Eatherton, George Varghese, Zubin Dittia

 April 2004 **ACM SIGCOMM Computer Communication Review**, Volume 34 Issue 2

Full text available: pdf(189.39 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#)

Even with the significant focus on IP address lookup in the published literature as well as focus on market by commercial semiconductor vendors, there is still a challenge for router architects to find solutions that simultaneously meet 3 criteria: scaling in terms of lookup speeds as well as table size, the ability to perform high speed updates, and the ability to fit into the overall memory architecture of an Level 3 forwarding engine or packet processor with low systems cost overhead. I ...

3 [Fast address lookups using controlled prefix expansion](#)

V. Srinivasan, G. Varghese

 February 1999 **ACM Transactions on Computer Systems (TOCS)**, Volume 17 Issue 1

Full text available: pdf(258.60 KB)

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Internet (IP) address lookup is a major bottleneck in high-performance routers. IP address lookup is challenging because it requires a longest matching prefix lookup. It is compounded by increasing routing table sizes, increased traffic, higher-speed links, and the migration to 128-bit IPv6 addresses. We describe how IP lookups and updates can be made faster using a set of transformation techniques. Our main technique, controlled prefix expansion, transforms ...


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1 [A fast string-matching algorithm for network processor-based intrusion detection system](#)

Rong-Tai Liu, Nen-Fu Huang, Chih-Hao Chen, Chia-Nan Kao

 August 2004 **ACM Transactions on Embedded Computing Systems (TECS)**, Volume 3 Issue 3

 Full text available: [pdf\(571.00 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Network intrusion detection systems (NIDSs) are one of the latest developments in security. The matching of packet strings against collected signatures dominates signature-based NIDS performance. Network processors are also one of the fastest growing segments of the semiconductor market, because they are designed to provide scalable and flexible solutions that can accommodate change quickly and economically. This work presents a fast string-matching algorithm (called FNP) over the network proces ...

Keywords: Intrusion detection, network, pattern matching, processor

2 [Scalable high-speed prefix matching](#)

Marcel Waldvogel, George Varghese, Jon Turner, Bernhard Plattner

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Keywords: collision resolution, forwarding lookups, high-speed networking

3 [Router plugins: a software architecture for next-generation routers](#)

Dan Decasper, Zubin Dittia, Guru Parulkar, Bernhard Plattner

 February 2000 **IEEE/ACM Transactions on Networking (TON)**, Volume 8 Issue 1

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